REMARKS

Claims 1-29 are pending in the application. Claims 1-19 and 25-29 are rejected. The claims have been amended to clarify what is claimed, and not to change the scope of what is claimed. Note, pixel images, gray images, authorized users and unauthorized users were previously claimed. No new matter is added.

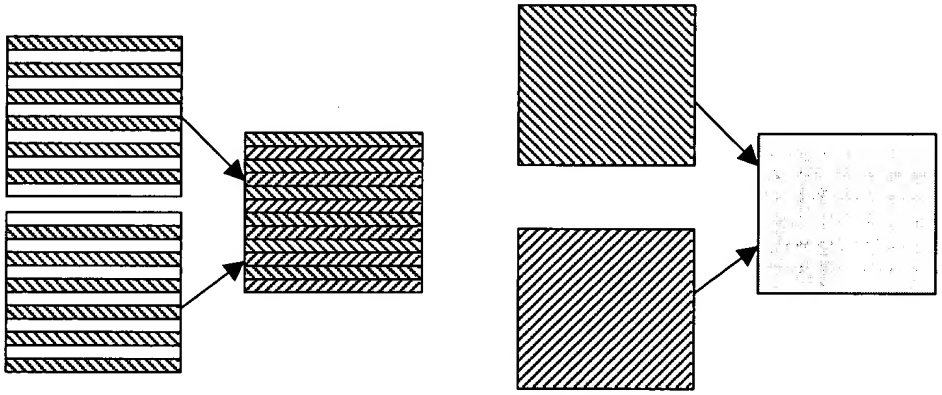
The Examiner rejected claim 1, 11-12, 15, 18-19, 25, and 27-29, as being unpatentable over Cox et al., hereinafter Cox, in view of Tourai (US 6,784,887). Cox inserts a positive watermark in an odd field of an image and a negative watermark in an even field of an image. The two fields are interlaced to produce a frame.

It should be understood that a watermark is no good unless it can *always* be visible. A good example of a watermark is the portrait of Jackson on the left side of a twenty dollar bill. Therefore, the Cox method cannot display an image that is visible only to an authorized user. That would have no use.

Cox does not disclose, describe, suggest or show images that are only visible to an 'unauthorized' user. The Cox watermark, to be of any value, must be visible to everyone. Instead, the purpose of the Cox watermark is to mark content as 'authorized'. Presumably, content without the watermark is 'unauthorized.' Authorized and unauthorized **content** do not make obvious authorized and unauthorized **users** as claimed.

Furthermore, Cox does not negate a data image. Cox only negates a watermark, which only is a very small part of an image. The watermark is inserted in interlaced odd and even fields of an image. It is well known that the odd and even fields are entirely mutually exclusive and disjoint. That is, there is nothing in the odd field that is in the even field, and vise versa. Therefore, no part of the odd field can be any part of the even field. Thus, in terms of what is claimed, Cox cannot have a mask image that is a negation of the data image.

The difference between field based negation as in Cox and image based negation as claimed is shown in the figures below.



Cox Invention

Cox specifically distinguishes fields from images, and asserts that to obtain his desired effect fields must necessarily be used, see column 2:

"When inserting a watermark into a video data sequence, it is **necessary** to decide whether watermark insertion should be performed **on entire image frames or on individual fields. There are several advantages to using field-based watermarking**. First, if a watermark is inserted into the fields, but is transmitted in frame-mode, it is only necessary to temporarily store 16 lines of the frames in order to reconstruct the corresponding fields. In contrast, if frame-based watermarking is used, but the video data is transmitted as interlaced fields, then the entire first field may have to be stored in order to reconstruct the corresponding frame. However, for the method described herein, only an additional bank of N 8.times.8 accumulators is needed. Second, it is possible to exploit the field-based format in order to perceptually hide the watermark. In particular, if a watermark is inserted into the even field and the negative of the watermark is inserted into the odd field, a significant masking effect is obtained."

Furthermore, Cox strongly teaches away from negating images as claimed. Cox gives the following reasons why images should **not** be used, see column 2, line 57 to column 3, line 62.

First, the perceptual mask at the frame (image) level is weaker than in a field based method.
Second, when frames are dropped during a standard NTSC to SECAM conversion, detecting the watermark is not possible, which makes frame based watermarking open to tampering.
Third, field based watermarking reduces noise.
Fourth, field based watermarks equalize power requirements.
Fifth, frame based watermarking causes visible artifacts.
Sixth, field based watermarking is more robust to video processing.
Seventh, frame based watermarking is more robust to low-pass and aperture filtering.

Cox concludes that section with:

> A principal object of the present invention is therefore, the provision of field-based digital watermarking.

From the above, it should be clear that Cox does not negate images, as implied by the Examiner. Actually, Cox does not negate fields. At best, Cox negates subblock.

Because the invention negates pixels, the invention must operate on **uncompressed** images. In contrast, Cox negates frequency (DCT) coefficients stored in subblocks of **compressed** MPEG or JPEG images. Cox states numerous reasons why he operates in the compressed domain. Cox does not negate pixel of

uncompressed images. Negation of DCT coefficients does not make obvious negation of pixels.

There is no selection of images as claimed in Cox. The selection button in Tourai manually selects images. Tourai cannot be combined with Cox, which requires the selection of interlaced fields. With the Tourai device everybody sees nothing. Tourai is useless for solving the stated problem for displaying an image only to an authorized user.

With the claimed device, only the authorized user sees the displayed image, while at the same time unauthorized users see nothing but a gray image. It is not at all clear what the result would be if Tourai's device is applied to Cox, and what the effect would be on the watermark. Applicants strongly believe it would make the Cox method inoperative for its intended use.

The claimed invention sequentially displays selected images. Cox generates interlaced fields. Interlaced fields do not make sequential displaying images obvious.

At column 2 of Cox, there is nothing to suggest that a video is displayed only to authorized users as claimed, see below:

A video or DVD video displayed on a monitor comprises a sequence of image frames. Each image frame, in turn, may include two interlaced fields, sometimes referred to as an odd field and an even field. MPEG-2 compression supports the encoding and transmission of video data in either field or frame format.

In the present invention, watermarking insertion procedures, of the prior art, such as the one referenced above, are modified such that a watermark is inserted into two fields of the image of a video signal in such a manner that a positive watermark is inserted in one field and negative watermark is inserted into the other field. The term "positive watermark" refers to a watermark signal inserted in a first field of the image. The term "negative watermark" refers to a watermark signal which is the inverse or opposite of the positive watermark and which is inserted into the other field of the image.

Applicants respectively request the Examiner to specifically point out which word she believes to mean "only to an authorized user."

The Applicant cannot find the 'random generator' referenced by the Examiner.

With regard to claim 11 Tourai discloses select signal generated by a random generator (the select signal is randomly generating the image on the display unit until a third party (i.e., unauthorized user) is viewing the image, then the select signal make sure that the 'dummy' image is displayed).

However, the word 'random' does not appear anywhere in Tourai. The Examiner makes an unsupported generalization, that Tourai is "randomly generating images." This assertions are nothing more that an omnibus rejections and provides no reasonable level of understanding of the basis for the Examiner's position. As recognized in MPEP 707.07(d), "omnibus rejection of the claim ...is

usually not informative and should therefore be avoided." The Examiner's rejection ignores explicit limitations recited in claims. MPEP 707.07(f) further mandates that "where a major technical rejection is proper, it should be stated with a full development of the reasons rather than by a mere conclusion coupled with some stereotyped expression." The rejection by the Examiner is a mere conclusion, without a full development of reasons. MPEP 706.07 further makes clear that "the invention as disclosed and claimed should be thoroughly searched in the first action and the references should be fully applied." The rejection fails not only to provide a reasonable rational as to how, in the examiner's view, the applied art can be construed to teach each and every feature in the rejected claims, but the rejection also fails to even consider explicitly claimed features of the invention as recited in claims.

Applicant cannot find anything that relates to displaying images in a random order in the section of Tourai referenced by the Examiner.

> The image output unit **1002** displays on the display **102** an image based on the display data stored in the display image buffer **105**, and the image forming device **103** forms an image based on the print data transmitted from the image generator **1003**.
>
> The image generator **1003** adjusts the position and magnification of the display image based on user specifications, this adjustment being performed on the dummy data generated by the dummy image generator **1004** in the dummy mode, or performed on the input data stored in the image memory **106** in the normal mode, and stores the data in the display image buffer **105**. The image generator **1003** trans-

As stated above Cox negates DCT coefficients in the compressed domain. There is no negation of pixel in Cox.

The Examiner states that:

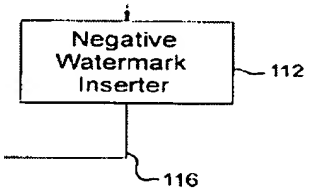
> With regard to **claim 18** Tourai discloses select signal generated by a random generator (the select signal is randomly generating the image on the display unit until a third party (i.e., unauthorized user) is viewing the image, then the select signal make sure that the 'dummy' image is displayed).

This is a mere conclusion inconsistent with MPEP 7067.07. There is no random generator in Tourai.

The Examiner states that item 112 produces a mask image.

> With regard to **claim 19** Cox discloses the video input 102 (col. 4 lines 52-53) and negating to produce the mask image at 112 and 116 in Figure 1.

However, Figure 1 shows that item 112 inserts a negative watermark.



Item 112 in Cox does not produce a mask image. A watermark is not an image.

Image: The optical counterpart of an object produced by an optical device, as a lens or mirror, or an electronic device.
Electronic Watermark: A watermark identification embedding digitally in an image to identify the owner of rights to the image.

The arguments above apply equally to claim 25.

The Examiner implies that Tourai discloses a periodic selection. This is not only wrong but also inconsistent with the Examiner's earlier assertion that the selection in Tourai is random. The Applicants read:

Item **1041** is a mode specification button for specifying the operation mode of the image processing device. The mode specification button **1041** includes a normal mode button **1041***a* and dummy mode button **1041***b*. Since the normal mode is usually used, the normal mode button **1041***a* is lighted, but when the dummy mode button **1041***b* is pressed, the dummy mode button **1041***b* is lighted.

The dummy mode button **1041***b* is pressed when specifying a mode wherein an image input to the image processing device is not directly displayed on the display unit **102** (hereinafter referred to as "dummy mode"), the input image being, specifically, an image (hereinafter referred to as "input image") based on image data (hereinafter referred to as "input data") stored on a recording medium inserted into the media slot **1011** for receiving recording media provided on the media installation unit **101**. When the dummy mode is specified, the input image is not directly displayed on the display unit **102** (hereinafter, the image displayed on the display unit **102** is referred to as the "display image," and the image data comprising the display image are referred to as "display data"), and another image is displayed rather than the input image (hereinafter, this other image is referred to as the "dummy image," and the image data comprising the dummy image are referred to as "dummy data"). The generation of the dummy data is described later. In the normal mode, the input image is directly displayed on the display unit **102**.

but cannot find anything related to periodicity.

As stated above, now with respect to claim 29, Cox's negation is on DCT coefficients.

Claim 2-6, 10, 13-14, 16-17 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (hereinafter, "Cox") in view of Tourai (US 6,784,887) as applied to claims 1, 11-12, 15, 18-19, 25 and 27-29 above, and further in view of Stern et al. (hereinafter, "Stern") (US 6,597,328).

The active glasses in Stern are synchronized to obscuring lights, see the section referenced by the Examiner.

ing lights output **10P**. The active glasses **20** can receive the sequencing pattern in the decoder **20A** and, based thereon, can determine when to open and close the shuttered display **20B**. In this way, the shuttered display **20B** of the active glasses **20** can be opened and closed synchronously with the deactivation and activation of the obscuring lights **10M**.

In contrast, the claimed optical shutter is synchronized to the data and mask images. The claimed shutter and the Stern shutter operate in completely different manners. Furthermore, "the opening and shutting [is] synchronized in **phase and frequency** to the select signal." The Examiner fails to address the last two limitations, therefore the rejection is improper. Furthermore, Stern cannot be combined with Cox because Cox is field based. Synchronizing to the fields would only yield half an image, see figures above.

The Examiner states:

With regard to claim 3 Stern discloses polarizing lens at col. 5 lines 61 to col. 6 lines 1-5.

This is not what is claimed. What is claimed is a polarizing optical shutter device includes a polarizing lens on either side of a ferro-electric liquid crystal polarization rotator.

Stern does not disclose anything "ferro-electric". Stern does not disclose anything "liquid crystal". Stern does not disclose a "rotator", see:

> The operation of the active glasses **20** in accordance with the inventive arrangements is shown diagramatically in FIG. **3**. In the present invention, the active glasses **20** contain electro-optical elements typically found in active glasses, for example shutters in the shuttered display **20B**. Specifically, a shutter sequence control **21** can control the sequencing of the shutters of the shuttered display **20B**. In addition, as discussed above, the active glasses **20** can include a decoder **20A** for decoding encoded sequencing data transmitted by the transmitter **30A** of the computer **10** and received by the active glasses **20** in receiver **30B** across data communications link **30**.

The Examiner has ignored at least three limitations in claim 3.

In the rejection of claim 6, the Examiner equates 'phase' and 'time'. This is in conflict of real-world physics, and the ordinary meaning of the words.

Time: "The measured or measurable period during which an action, process, or condition exists or continues."
Phase: "The point or stage in a period of uniform circular motion, harmonic motion, or the periodic changes of any magnitude varying according to a simple harmonic law to which the rotation or oscillation has advanced.

Time operates in the temporal domain, while phase operates in the spatial domain, and never the twain shall meet. Time can never make phase obvious.

As stated above, the Stern synchronization according to his clock cycles is inconsistent with what is claimed.

Claimed are a 'seed value and a 'real-time' value. Applicants cannot find anything about a "seed value' and a 'real-time' value at:

> In order to coordinate the specific sequencing of the obscuring lights **10M** with the alternating action of the active glasses **20**, an encoding application **10N** can be employed. The encoding application **10N**, which implements a sequencing pattern encoding algorithm, preferably incorporates a random number as a seed for the encoding algorithm. The encoding algorithm can set the obscuring lights device driver **101** and active glasses shutter sequence control **21** to a corresponding sequencing pattern. Notably, any popular encoding algorithm can be used in the sequencing pattern.
>
> In order to properly synchronize the obscuring lights **10M** and the active glasses **20** in a secure manner, a random cycle time between strobe cycles can be chosen and inserted into the synchronization signal. In order to encode a synchronization signal with a random cycle time, the encoder appli-

Clarification is requested, or the rejection should be withdrawn.

Claimed are a first and second random select signal. Stern does not disclose two random signals in step 110:

> obscuring lights remain deactivated. If the user chooses to obscure the video output by selecting an encoded sequence, for instance where security is of concern, in step **110**, a seed pattern can be generated in order to determine a random cycle time for a synchronization pattern.

Instead, step 110 generates a seed pattern.

The above arguments apply to claim 16.

Claimed is "alternately selecting the pixel from the data and the pixel from the mask images according to clock cycles." The selecting in Stern is related to obscuring lights.

The above arguments apply to claim 26.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cox et al. (hereinafter, "Cox") in view of Tourai (US 6,784,887) as applied to claims 1, 11-12, 15, 18-19, 25 and 27-29 above, and further in view of Hiroaki (US 6,661,425).

The Examiner states that Hiroaki discloses the following:

reference. Tourai discloses the image being a color image at col. 4 lines 37-50 but not specifically each color channel in details. Hiroaki discloses a color image and the negation is done independently for each color channel of the color image (col. 28 lines 5-11). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Hiroaki with Tourai and Cox.

see:

> FIG. 7*b* shows an image obtained by extracting the superposing information from the original image to form the superposing image, in accordance with the information for designating the superposing area **10**. If the area other than the superposing information is black in color, for example, if the values of R, G and B are all 0 or near 0, subsequent image processing is facilitated. In the case of the superposed

Applicants does not see a negation of an image. In fact what Hiroaki discloses is an extraction of superposing information to form a superposing image. This designates a superposing area. Then, if the area, other than the superposing information is block, image processing is facilitated. There is no negation here.

The Examiner asserts that Hiroaki discloses gamma correction as claimed namely, each output pixel is determined by: output = $255((\text{input}/255)^{1/\gamma}) + 0.5$.

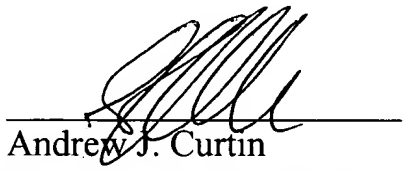
The section referenced by the Examiner states:

> If the α-plane of each pixel is made up of eight bits, the structure of the simplest mask is such an image in which a masked portion (area) is of the α-value equal to 0 and the remaining area has a value of 255.
>
> This image may be ANDed (logical multiplication) with respect to the image to be superposed to apply a masking effect to a site corresponding to the superposing image. Each pixel of the image to be superposed, corresponding to the mask pattern, may be multiplied with a coefficient k ($0 \leqq k \leqq 1$) to decrease the luminosity of the portion in question of the image to be superposed, instead of being processed with the logical product processing, as described above.

The Applicants do not see the claimed gamma function. Instead, Hiroaki deals with alpha values. Applicants believe that $\alpha \neq \lambda$.

All rejections have been complied with, and applicant respectfully submits that the application is now in condition for allowance. The applicant urges the Examiner to contact the applicant's attorney at the phone and address indicated below if assistance is required to move the present application to allowance. Please charge any shortages in fees in connection with this filing to Deposit Account 50-0749.

Respectfully Submitted,



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